



## INTRODUCTION

The monthly newsletter of MITAOE, "**The Insider**," shares information about educational events, monthly activities, guest lectures, webinars, and other events that help B.Tech and B.Des students prepare for a bright future. There are many more activities that take place on the MITAOE campus. Standing by the motto, "You grow and the institution will grow with you," we at MITAOE honor one another's success stories, both large and small, and this is one way we do it!

It is our earnest hope that you will find The Insider, our monthly newsletter, to be beneficial and inspiring for future development. We would like to express our gratitude to all of the faculty and staff for making this possible each month.

Here are the highlights of January 2024 with the monthly newsletter from MITAOE- 'The Insider'.

Reach us at [marketing@mitaoe.ac.in](mailto:marketing@mitaoe.ac.in) for constructive feedback that will be helpful for us.

# SPOKE PERSON

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**Dr. Rajeshwari M. Goudar**

Professor & Dean of School of Computer Engineering

Global Excellence in research, teaching and technology development is the vision of the School. Our aim is to develop high quality technical and scientific manpower to meet the challenges of a fiercely competitive environment and to encourage the learning and creative community to promote the development and usage of applications for betterment of society. The curriculum of the school is framed by considering the requirements of the industry which will not only inculcate various skills within the learners but impinge related concepts which are necessary in day to day life.

Although, with changing dynamics of the industry due to technological advances and innovations, we urge students of all the branches to be ready and equipped to explore a wide range of options across a broad spectrum of sectors.

## ACTIVITIES

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- School of E&TC Engineering organized **"TechnoPHILIA '24"**, the 7th National Level Technical Event on Poster Presentation and Project Competition on 5th April 2024. The event is organized by SPARK Club in association with ISA, Pune Section and IEEE Student branch on 24th March 2023.





School of E&TC Engineering organized a Guest Lecture on '**Optimum Receivers in Communication Systems**' by Dr. Seemanti Saha, Assistant Professor, National Institute of Technology, Patna on 11th April 2024 for TY BTECH students.



- School of E&TC Engineering organized a Workshop on '**Automation Nexus: A Deep Dive into PLC and SCADA Technologies**' by Ms. Nital Prashant Sarap, an Instrumentation Expert on 14th and 15th March 2024 for Final Year BTECH students.



- **Mr. Hussain Shaikh**, School of Humanities and Engineering Science organized a Symposium on 4th April 2024 under **NSS**. **200** students attended.

## RESEARCH & DEVELOPMENT

### Journal

- P. Shriram, N. Navghare and A. Y. Bhalerao published a paper in 2024 2nd International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT), Bengaluru, India with title File Encryption Using AES and XOR Algorithm for Data Security.



## Non-obtrusive Cardiac and Neural Monitoring by Using Contactless ECG and EEG with PPG and IoT Technology

Vijaykumar Mantri, Vinayak Biradar, Navnath D. Kale, Prakash Kumar Sarangi, Kedarnath Bodapally and Rajkumar B. Patil

**Abstract**

The upcoming wireless health revolution will be propelled by ubiquitous physiological monitoring. Electrocardiogram (ECG) and electroencephalogram (EEG) are two crucial health indicators that can only be improved with continuous monitoring over time. In this study, we propose a chest-attached, noninvasive photoplethysmogram (PPG) measuring system for everyday use with the help of Internet of Things (IoT), sensor amplifier circuits capable of adjusting the light intensity to suit clothing properties can be used without skin contact. Despite developments in wireless technology and electronics downsizing, the inconvenience and pain of wet adhesive electrodes limit the usage of wireless home ECG/EEG monitoring. In recent years, research has focused on developing non-contact ECGs and EEGs, which are wireless biopotential instrumentation systems that use non-contact capacitive electrodes that operate without skin contact. Results reveal that non-contact capacitive electrodes work similarly to electrodes made of Ag/AgCl with chest and headbands, which are presented in-depth, along with comprehensive technical information, circuit schematics, and manufacturing methods. ECG chest strap, EEG headband, or a motionless electrode location can all be used with the non-contact electrode. Future mobile health applications will benefit greatly from these IoT-based wireless systems and wearable design, which is far more pleasant for patients to use than more traditional contact-based systems.

Published on: December 14, 2023

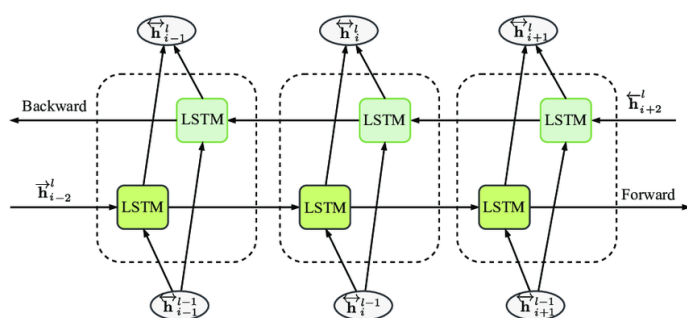
doi: 10.17756/nwj.2023-64-097

**Citation:** Mantri V, Biradar V, Kale ND, Sarangi PK, Bodapally K, et al. 2023. Non-obtrusive Cardiac and Neural Monitoring by Using Contactless ECG and EEG with PPG and IoT Technology. *NanoWorld J* 9(S4): S570-S574.

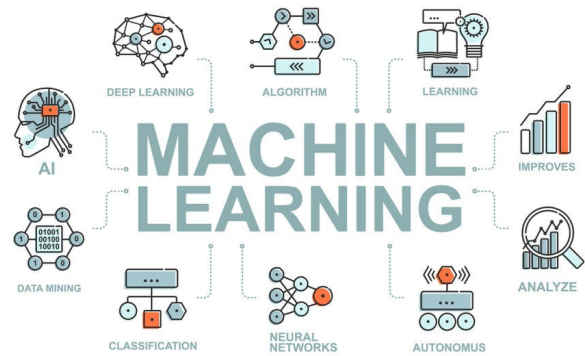
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- Mr. Vijaykumar Mantri, Vinayak Biradar, Navnath D. Kale, Prakash Kumar Sarangi, Kedarnath Bodapally and Rajkumar B. Patil published a paper in Nanoworld Journal Scopus indexed, with title Non-obtrusive Cardiac and Neural Monitoring by Using Contactless **ECG and EEG with PPG and IoT Technology**.



- Dnyanada Mahajan, Prachi Channe, Shruti Diwate, Sneha Kharate & Rudragouda Patil published a paper in an International conference titled Smart Grading System Using **Bi LSTM** with Attention Mechanism.



- Nilesh D. Navghare, Pratiksha Rale, Sakshi Kolhe, Vaishnavi Bhadale, Rachana Wasnik published a paper in **3rd International Conference on Machine Learning and Information Processing 2023, Ranchi, India** with title Web application for multiple disease prediction using machine learning and deep learning.



- Ishwari R. Deshpande, Abhishek Patil, Prof. Vinaya Tapkir have presented a paper entitled '**Aerial Delivery System**' in **9th IEEE International Conference for Convergence in Technology (I2CT)** during 5th and 7th April 2024.



- Aditya Karade, Sharada Falane, Dhananjay Deshmukh, Mr. Vijaykumar Mantri published a paper in 45th World Conference on Applied Science, Engineering & Technology (45th WCA-SET-2023) with title "**Brain Tumor Detection and Classification using Pre-Trained Deep Learning Models**"
- Dr. Kalpana Pawase, Sayuj Singh, Utkarsh Shirbhate have presented a paper titled '**Millet Production Management using Cloud Computing for Farmers**' in the National Conference on Pervasive Computing (NCPC)-2024 organized by Sinhgad College of Engineering, Pune on 5th April 2024.

## Reviewer



- Mr. Ashish Itolikar, was appointed as the reviewer for Sigma Journal of Engineering and Natural Sciences E-ISSN: 1304-7205 for Reviewing the paper "Integrated Renewable Energy System and Sustainable Development with Storage Technologies: A Review" is appointed as reviewer.

## EVENT

- '**Aashechya Gungit Lataklela Tarunya**' - a book reading and guiding session was organised for students of **MITAOE** where Mr Sharad Tandale, a writer and entrepreneur, Dr Anand Kulkarni, Mrs Sarika Kulkarni and the writer himself, Mr Dnyaneshwar Jadhavar were present for the event.



- School of **ENTC** arranged an event called **TechnoPHILIA24** giving platforms to students to show their talent and skill via participating in an exhibition

- 4 new startups were on-boarded with **EDF at MITAOE**



## OTHERS

- **School of E&TC** Engineering conducted Product Audit of **TY BTECH** Students on 13<sup>th</sup> April 2024.



"We **Thank** all the faculty members, staff, and students who have been helpful and cooperative while the newsletter was under process. It is with a team of active members that the February edition of "**The Insider**" is ready to be published."

### EDITORIAL TEAM

Bhushan Bembale  
Nilesh Lokhande

Harshada Kumbhakarna  
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